

wherein the fluorescent authenticity feature is illuminated at the excitation wavelength with an excitation pulse and a response pulse following the excitation pulse is detected with a defined time delay.

3. (Twice Amended) The sensor as claimed in claim 2, wherein, in order to identify the signet on a document, the signet is equipped, at least in subregions, with a pigment which can be detected using the up-conversion effect, and the sensor is adapted to use the conversion effect, wherein the specific excitation wavelength is longer than the response wavelength.

4. (Twice Amended) The sensor as claimed in claim 2, wherein, in order to identify the signet on a document, the signet is equipped, at least in subregions, with a pigment which can be detected using the down conversion effect and the sensor is adapted to use the down-conversion effect wherein the specific excitation wavelength is shorter than the response wavelength.

5. (Twice Amended) The sensor as claimed in claim 2, wherein, in order to identify the signet on a document, the signet is equipped, at least in subregions, with a pigment which can be detected using the same wavelength as the specific excitation wavelength and the sensor is adapted to detect the response wavelength at the same wavelength as the specific excitation wavelength.

7. (Twice Amended) The sensor as claimed in one of claims 3 to 6, wherein the pigments are added directly to an applied solution, to an applied paint, to the adhesive or to the paper.

9. (Twice Amended) The sensor as claimed in claim 8, wherein the sensor is formed as a two-band sensor, in which the fluorescent authenticity feature is illuminated once and in which two different spectral bands are evaluated.

10.(Twice Amended) The sensor as claimed in claim 9, wherein an additional sensor is integrated in the form of a UV luminescence sensor, in which the fluorescent authenticity feature is illuminated with UV light of a different wavelength and wherein the luminescence signal is detected in a further different spectral band.

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11. (Twice Amended) The sensor as claimed in claim 10, wherein an additional object detector is used, which indicates to the sensor when the signet starts and when it ends.

12. (Twice Amended) The sensor as claimed in claim 11, wherein in order to identify the signet on a document, the signet is equipped, at least in subregions, with a pigment having a fast rise time and a fast decay time in order of magnitude of 0.1 ms and the response pulse following the excitation pulse is detected with a defined time delay in the order of magnitude of 0.1 ms.

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19. (Twice Amended) The sensor as claimed in one of claim 18, wherein a reflection cone is arranged in front of the electronic evaluation unit for beam intensification which is in the form of a funnel-shaped or cylindrical a transparent solid body.

20. (Twice Amended) The sensor as claimed in claim 19, wherein a photomultiplier having a detection surface said surface corresponding approximately to the outlet surface of the reflection cone, is arranged immediately behind the reflection cone.

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25. (New) The sensor as claimed in claim 6, wherein the external light is suppressed by evaluation only those pulsed florescent signals which are received with the pulse recitation frequency of the pulsed illuminate.

26. (New) The sensor as claimed in claim 7, wherein the external light is further

suppressed by filtering the received signal by means of an electronic high-pass filter.

27. (New) The sensor as claimed in claim 8, wherein the identification

confidence of the authenticity identification is increased by identifying the fluorescent authenticity feature during two or more periods of a sequence of pulses.

28. (New) The sensor as claimed in claim 10, wherein the UV light is emitted from an UV-LED at a wavelength of 370nm.

29. (New) The sensor as claimed in claim 11, wherein the signal detector is formed as an optical barrier.

30. (New) The sensor as claimed in claim 19 wherein the reflection cone is a combination of cylindrical lens and the funnel shaped transparent solid body.
